Homework #3 Help

Background Information

Each year, millions of Americans move to new homes for a variety of reasons. Some people relocate for new jobs, others do it to seek education, start a family, or because of economic necessity.

The U.S. Census Bureau collects data on moving demographics and publishes it each year as part of the Current Population Survey. This data makes it possible to locate and analyze trends in why and where people move.

Problem Statement

In this assignment, students will analyze data about mobility of the population for different age groups and distances for the years 2000 through 2012.

Instructions

IMPORTANT: This is not the actual Homework for your section. You will not receive any credit for completing this project.

IMPORTANT: Complete the steps below in the order they are given. Completing the steps out of order may complicate the assignment or result in an incorrect result.

1. Download and extract the provided Data Files ZIP file. It contains the following file for use in this assignment:

    a. **mobility.csv** – Mobility information for different age groups from 2005 to 2015 [1].

Column Name	Type	Description
Year	Number	Year of mobility data.
Age Group	Text	Age group to which the population belongs.
Total Population	Number	Total population for the particular age group.
Did Not Move	Number	Number of people who did not move.
Moved Same County	Number	Number of people who moved within the same county.
Moved Same State	Number	Number of people who moved to a different county in the same state.
Moved Different State	Number	Number of people who moved to a different state.
Moved Abroad	Number	Number of people who moved into or out of the United States.

2. Create a new Microsoft Excel workbook named **lastname_firstname_hh3_pmp.xlsx**.

3. We must adjust the sheets in our workbook.

   a. Rename *Sheet1* to *Mobility.*

   b. Add a new sheet named *Scenarios.*

   c. Add a new sheet named *Analysis Questions.*

4. Import the following item into the workbook:

   a. **mobility.csv** file – Import starting in cell **A3** of the *Mobility* sheet. The file is comma-delimited. Its first row contains headers.

5. We wish to apply formatting to the *Mobility* sheet.

   a. We must setup a table to store data on population mobility.

      i. If a table does not already exist in cells **A3** through **H58**, create one using a style of your choice. The table has headers and will overlap external data ranges. If prompted, convert the selection to a table and remove all external connections.

      ii. If a table already exists in cells **A3** through **H58**, format the table using a style of your choice other than the default table style.

   b. For the table, turn on the ***First Column*** option.

   c. Enter text in the cells as indicated below:

      i. **A1**: `Population Mobility`

   d. Merge (but not center) cells **A1** through **H1**.

   e. Apply the *Heading 1* cell style to cell **A1**.

   f. Format the cells as indicated below:

      i. **C4** through **H58**: number with no decimal places, use 1000 separator

   g. AutoFit the widths of columns **A** through **H**.

6. To better understand our data, we wish to create a PivotTable.

   a. Create a new PivotTable based on the data in cells **A3** through **H58** of the *Mobility* sheet. Place the PivotTable on a new sheet named *Mobility PivotTable*.

   b. On the PivotTable, do the following:

      i. Add the age group as a ***Filters*** field.

      ii. Add the year as a ***Rows*** field.

      iii. Add the number of people who did not move, moved in the same county, moved in the same state, moved to a different state, and moved abroad as ***Values*** fields.

    c. We need to perform formatting on our PivotTable.

        i. Group the years into sets of 2 starting at 2005.

        ii. Summarize the numbers of people who moved figures by summing them.

        iii. Format the cells as indicated below:

            (1) **Sum of Did Not Move**, **Sum of Moved Same County**, **Sum of Moved Same State**, **Sum of Moved Different State**, and **Sum of Moved Abroad** fields: number with no decimal places, use 1000 separator

7. We also wish to apply formatting to the *Scenarios* sheet.

    a. Enter text in the cells as indicated below:

        i. **A1**: `Population Mobility Scenarios`

        ii. **A3**: `Scenario`

        iii. **B5**: `Annual Growth Rate`

        iv. **C5**: `2015`

        v. **D5**: `2016`

        vi. **E5**: `2017`

        vii. **F5**: `2018`

        viii. **G5**: `2019`

        ix. **H5**: `2020`

        x. **I5**: `2021`

        xi. **J5**: `2022`

        xii. **K5**: `2023`

        xiii. **L5**: `2024`

        xiv. **M5**: `2025`

        xv. **A6**: `Total Population`

        xvi. **B6**: `0.84%`

        xvii. **C6**: `312,296,000`

        xviii. **A7**: `Charleston Population`

        xix. **B7**: `0%`

        xx. **C7**: `36,322,000`

      xxi. **A8**: `Amount above Threshold`

b. Merge (but not center) cells **A1** through **M1**.

c. Apply the *Heading 1* cell style to cell **A1**.

d. Apply background fill colors to the cells as indicated below:

    i. **A5** through **M5**: *Blue, Accent 1, Lighter 40%*

    ii. **A8** through **M8**: *White, Background 1, 25% Darker*

e. Format the cells as indicated below:

    i. **B6** through **B7**: percentage with 2 decimal places

    ii. **C6** through **M7**: number with no decimal places, use 1000 separator

    iii. **C8** through **M8**: percentage with 2 decimal places

f. AutoFit the width of columns **A** through **B**. Set the width of columns **C** through **M** to 12 (1.06").

8. On the *Scenarios* sheet, we wish to calculate information about possible population in the future.

a. We wish to percentage of the population that moved. Enter the formulas in the cells as indicated below.

    i. **C8**: `=C7/C6`

    ii. **C8** through **M8**: AutoFill the formula from cell **C8**.

b. We want to estimate future salary scenarios.

    i. Enter the formula into the cell indicated below.

        HINT: To avoid errors, copy-and-paste the provided formula.
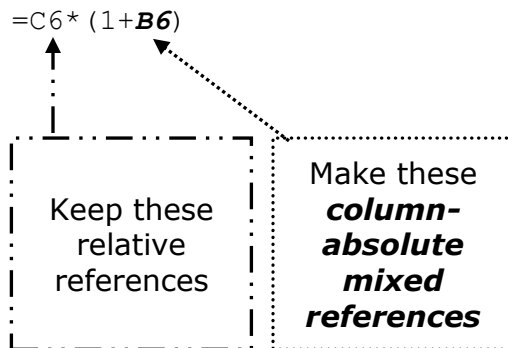
     (1) **D6**: `=C6*(1+B6)`

ii. We must adjust the future values formula so its cell references are correct when the formula is copied.

In cell **D6**, modify the cell references so they are column-absolute mixed or relative references as indicated:

```
=C6*(1+B6)
```

Keep these relative references

Make these ***column-absolute mixed references***

iii. We will now AutoFill the modified formula. Enter the formula into the cells as indicated below.

(1) **D6** through **M7**: AutoFill the formula from cell **D6**.

9. We will now evaluate two different scenarios for population mobility.

a. The first scenario involves an -0.92% annual change in the number of people who moved, the same rate as from 2005 to 2015.

i. Enter text in the cells as indicated below:

(1) **A3**: `Historic Growth Rate`

(2) **B7**: `-0.92%`

ii. There is nothing to do for this step. Please proceed to the next step.

iii. Using Scenario Manager, create a new scenario named `Historic Growth Rate`. Have the scenario work by changing the values of cells **A3** and **B7** to the values they contain now.

b. The second scenario involves having the percentage of the population that moved level out to 10.75% in 2025.

i. Enter text in the cells as indicated below:

(1) **A3**: `10.75% Moved`

(2) **B7**: `0.00%`

ii. Use Goal Seek to find an annual growth rate to achieve 10.75% of the population having moved in cell **M8**. Have Goal Seek change the value of cell **B7** until it locates the correct value.

        iii.   Using Scenario Manager, create a new scenario named `10.75%` `Moved`. Have the scenario work by changing the values of **A3** and **B7** to the values they contain now.

10. We need to set up the *Analysis Questions* sheet so that it can store responses to the analysis questions.

    a.   Enter text in the cells as indicated below:

        i.   **A1**: `Question Number`

        ii.   **B1**: `Response`

    b.   Bold the contents of row **1**.

    c.   AutoFit the width of column **A**. Set the width of column **B** to 100 (8.39").

    d.   Set the height for rows **2** through **5** to 110 (1.53").

    e.   Change the vertical alignment for columns **A** and **B** so that text is displayed at the top of each row.

    f.   Turn on text wrapping for column **B**.

11. Starting in row **2** of the *Analysis Questions* sheet, answer four of the five analysis questions below. Respond to one question per row.

    a.   Which age group is most likely to move? Why do you think this group is more likely to move than other groups?

    b.   Most people who move stay within the same county. Why do you think people are more likely to move nearby as opposed to somewhere further away?

    c.   People 70 and older are far less likely to move than people in younger age groups. Why might this be the case?

    d.   The rates of people moving longer distances (in the same state, to a different state, or abroad) were lower in the 2008-2011 period than before or since. What might have caused this drop?

    e.   Mortgage interest rates, which affect the cost of buying a house, have been near historical lows since 2011. It doesn't seem like there has been an increase in the number of people moving, however. What are some possible reasons why more people haven't taken advantage of the low interest rates by moving and buying houses?

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Population Mobility Problem

Grading Rubric

This is a practice assignment and is worth no points. A comparable Homework would be worth 50 points and graded using this rubric, with partial credit awarded as appropriate:

Steps 3a-c	1 points total	Steps 8a-b	6 points total
Step 4	2 points	Steps 9a-b	10 points total
Steps 5a-g	4 points total	Steps 10a-f	3 points total
Steps 6a-c	10 points total	Steps 11a-e (pick 4 of 5)	2.5 points each
Steps 7a-f	4 points total		

The analysis questions in Steps 11a-e can be evaluated using this rubric:

Standard	Meets Requirements (1.25 points)	Does Not Meet Requirements (0 points)
Answer is reasonable.	Answer addresses the question prompt and is factually correct or a reasonable interpretation of available data.	Answer does not address the question prompt, is factually incorrect, or is an unreasonable interpretation of available data.
Answer is supported.	Logical rationale is provided to support the given answer.	Logical rationale is not provided to support the given answer.

References

[1] "Current Population Survey Data on Migration/Geographic Mobility," *U.S. Census Bureau*. Available: *http://www.census.gov/hhes/migration/data/cps.html*.